

Adherence to Blood Pressure Management Guidelines after Acute Stroke in the Florida Stroke Registry

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INTRODUCTION

- Appropriate hypertension (HTN) management is essential after acute stroke for secondary stroke prevention.
- Hypertension guidelines¹ recommend first line treatment medications based on patient-specific characteristics such as race ethnicity and medical comorbidities.
- The Florida Stroke Registry (FSR) is a statewide registry focused on reducing disparities in stroke care and utilizes the AHA Get With The Guidelines (GWTG)-Stroke tool.
- We investigated adherence to guideline recommended blood pressure (BP) treatment in patients admitted with stroke in the FSR.

METHODS

- Data Source**
- Florida Stroke Registry a multi-hospital GWTG Stroke Data Collaborative
 - All Acute stroke discharges Jan 2010 to Dec 2019 with recorded BP meds at discharge (N=194,274)
 - self identified as African Americans (AA), Hispanic or Caucasian (NHW) recorded.

Practice Guideline recommendations

- We established the following criteria to determine compliance with guidelines for BP treatment

 - Diagnosis of hypertension based on BP reading >140/90 at discharge
 - Avoidance of beta blockers (BB) as first or second line therapy unless a compelling cardiac indication (CCI);
 - Use of ACE inhibitors (ACEI) or angiotensin receptor blockers (ARBs) as first line in diabetes (DM);
 - Use of diuretics or calcium channel blockers (CCB) as first line therapy in African Americans.

Statistical Analysis

Descriptive statistics were done using medians or percentages as appropriate; Chi Square test and Kruskal-Wallis tests. Unadjusted multi-level logistic regression used to assess disparities in HTN diagnosis timing.

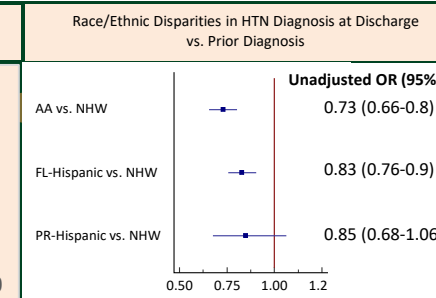
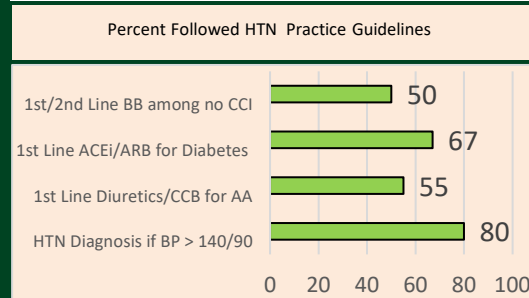
FUNDING

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RESULTS

Descriptive Statistics

Variable	Level	N=194274	Variable	Level	N=194274
Age at Onset (Mean, Std)		70.2 (14.1)	Stroke Type for this Encounter	Ischemic	143920 (76.1%)
Sex	Male	97815 (50.4%)		TIA	22336 (11.8%)
	Female	96346 (49.6%)		SAH	5922 (3.1%)
	Unknown	35 (0.0%)		ICH	16866 (8.9%)
Race/Ethnicity	FL White	118278 (62.9%)	Stroke Etiology TOAST	Large-artery athero	9391 (17.0%)
	FL Black	33441 (17.8%)		Cardio embolism	13883 (25.2%)
	FL Hispanic	26949 (14.3%)		Small-vessel Disease	12566 (22.8%)
	PR Hispanic	9312 (5.0%)		Other undetermined etiology	1983 (3.6%)
Diabetes	Yes	66383 (34.2%)		Cryptogenic	17302 (31.4%)
	No	127891 (65.8%)	BP at or below 140/90 at discharge	BP <= 140/90	93576 (60.5%)
A fib/Flutter	Yes	32243 (16.6%)		BP > 140/90	61042 (39.5%)
	No	162031 (83.4%)	Anti-HTN Medication at Discharge	ACE	21539 (13%)
Heart Failure	Yes	12191 (6.3%)		ARB	6484 (4%)
	No	182083 (93.7%)		BB	22135 (13%)
Coronary Artery Disease	Yes	46176 (23.8%)		CCB	12093 (7%)
	No	148098 (76.2%)		Diuretic	2924 (2%)
Hypertension Diagnosis Timing	HTN Prior	165338 (85.1%)		Other Anti-HTN Med	3136 (2%)
	HTN Discharge	14303 (7.4%)		More than one	99988 (59%)
	HTN None	14633 (7.5%)		None	25975 (15%)



DISCUSSION

- HTN Guideline based prescribing practices were followed in 55-67% of cases. Multiple antihypertensive medication was used in 59%.
- Diuretics were the least likely medication to be used as monotherapy only 2% while it is considered a first line medication by the guidelines.
- Among patients without CAD or MI, 13% were prescribed 1st line BB and an additional 37% used BB in combination.
- Among patients with DM, an ACEI or ARB was not used in 33% of cases.
- Among AA, 45% did not receive a diuretic or CCB.
- Of patients discharged with a BP>140/90, 20% were not diagnosed as being hypertensive or started on medications.
- Our study found lower odds of being diagnosed with HTN or in receiving guideline-based care for AA and Hispanics vs. NHW.

SUMMARY

In the Florida Stroke Registry, we identified several gaps and race ethnic disparities in data driven blood pressure management. This is an opportunity for future quality improvement or educational interventions. Being specific to Florida it can inform local policy makers.

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AUTHOR DISCLOSURES

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